



SEQUENCE LISTING

<110> Terek, Richard M.
 <120> CHONDROSARCOMA ASSOCIATED GENES
 <130> 21486-021DIV
 <140> US 09/819,144
 <141> 2001-03-27
 <160> 8
 <170> FastSEQ for Windows Version 3.0
 <210> 1
 <211> 164
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1)...(156)
 <400> 1
 atg gct gcg ggt ccc agg cca gga gct ccc tgc agg gcg ggg gct ccc 48
 Met Ala Ala Gly Pro Arg Pro Gly Ala Pro Cys Arg Ala Gly Ala Pro
 1 5 10 15
 acg atc gta ttg acc tct gga aga aga cag aca ctt tcc cac ggg agc 96
 Thr Ile Val Leu Thr Ser Gly Arg Arg Gln Thr Leu Ser His Gly Ser
 20 25 30
 tcc tct cca gcc aga gct aca ctt ggc aaa cct ttg gtc cta aat gat 144
 Ser Ser Pro Ala Arg Ala Thr Leu Gly Lys Pro Leu Val Leu Asn Asp
 35 40 45
 tat tca ctg aat tgaagaaa 164
 Tyr Ser Leu Asn
 50

<210> 2
 <211> 52
 <212> PRT
 <213> Homo sapiens

<400> 2
 Met Ala Ala Gly Pro Arg Pro Gly Ala Pro Cys Arg Ala Gly Ala Pro
 1 5 10 15
 Thr Ile Val Leu Thr Ser Gly Arg Arg Gln Thr Leu Ser His Gly Ser
 20 25 30
 Ser Ser Pro Ala Arg Ala Thr Leu Gly Lys Pro Leu Val Leu Asn Asp
 35 40 45
 Tyr Ser Leu Asn
 50

<210> 3
 <211> 884
 <212> DNA
 <213> Homo sapiens

<400> 3

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|------------|-------------|------------|------------|------------|------------|-----|
| acttccctgg | gttcacagca | ggggtggaac | tggattcttc | ctggatgggg | atccagatgg | 60 |
| aggtggagct | gcaccccttg | tagagaatgg | ctgcgggtcc | caggccagga | gctccctgca | 120 |
| gggcgggggc | tcccacgata | gtattgacct | ctggaagaag | acagacactt | tcccacggga | 180 |
| gctcctctcc | agccagagct | acacttggca | aacctttggt | cctaaatgat | tattcactga | 240 |
| attgaagaaa | tacggtttac | atatcttcca | agtatatatg | tagggttgat | ttgggaagca | 300 |
| gaacacagca | gccc aaattt | gcttgtaatg | tctgcgacta | cagcctgctg | gcctgccttc | 360 |
| actgtcttgg | gggaagctcg | gggagaccag | gtggactgga | gtagactgtg | cagagacact | 420 |
| ggtctggtga | agatgtccag | gaaaccacga | gcctccagcc | cattttccaa | caaccacca | 480 |
| tcaacaccaa | agaggttccc | aagacaaccc | agaagggaag | agggaccctg | caaggaagtt | 540 |
| ccaggaacaa | aaggctctcc | ctaaaagacc | accgcttcaa | aaaaacctga | ggaatggagt | 600 |
| gggccaacac | tatccagcca | ctctgaccag | ccgaacgagg | aactcaatca | aaatgcgcca | 660 |
| tagcaggacc | acaagggcaa | ggagaccacc | gccttctcca | gtgcttcctt | gggcagccag | 720 |
| taattcccag | gcaaggccag | agacttcaag | tctatctgaa | aagtctccag | aagtctaacc | 780 |
| ccagataaat | agccaacagg | gtgtagagta | cgttttacac | ccaaagggtg | atgccccatg | 840 |
| gtgatggaaa | taaaatgaac | atgttgtaaa | atgaaaaaaa | aaaa | | 884 |

<210> 4
 <211> 14
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Artificial sequence: oligonucleotide primer

<220>
 <221> misc_feature
 <222> (1)...(14)
 <223> n = A,T,C or G

<400> 4
 tttttttttt ttvn 14

<210> 5
 <211> 1946
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (1)...(1946)
 <223> n = A,T,C or G

<400> 5

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|------------|------------|------------|------------|------------|-------------|-----|
| cacgcaaagc | agtgtgggtt | gattctgagg | tgcactgtgg | gaaagagctt | gtcgctgcgg | 60 |
| tggtgtgtgt | ggagactcga | ttgttggtga | cagcgaaaga | acgataacaa | aatgccggag | 120 |
| cgagatagtg | agccgttctc | caaccctttg | gccccgatg | gccacgatgt | ggatgatcct | 180 |
| cactccttcc | accaatcaaa | actcaccaat | gaagacttca | ggaaantnnt | catgaccccc | 240 |
| aggngtgcac | ntacntntgc | accacnttnt | aantnnnttc | accatgagat | gccaagggag | 300 |
| tacaatgagg | atgaagaccc | agctgcacga | aggaggaaaa | agaaaagtta | ttatgccaaag | 360 |
| ctacgccaac | aagaaattga | gagagagaga | gagctagcag | agaagtaccg | ggatcgtgcc | 420 |

| | | | | | | |
|-------------|-------------|-------------|------------|-------------|-------------|------|
| aaggaacgga | gagatggagt | gaacaaagat | tatgaagaaa | ccgagcttat | cagcaccaca | 480 |
| gctaactata | gggctgttgg | ccccactgct | gaggcggaca | aatcagctrc | agnnragaga | 540 |
| agacanwnda | hcnaggagtc | caaatttcttg | ggtggtgaca | tggaacacac | ccatttgggtg | 600 |
| aaaggcttgg | attttgntnt | gcttchnaan | gtncgagctg | agattgncms | cmnanaraaa | 660 |
| nargaarang | nnctgatggg | aaancccmg | aaagaaacca | agaaagatga | ggatcctgaa | 720 |
| aataaaattg | aattttaaac | acgtctgggc | cgcaatgttt | accgaatgct | ttttaagagc | 780 |
| aaagcatatg | agcggaatga | gttggttcctg | ccgggccgca | tggcctatgt | ggtagacctg | 840 |
| gatgatgagt | atgctgacac | agatatcccc | accactctta | tcccgcagca | aggctgattg | 900 |
| ccccaccatg | gaggcccaga | ccacactgac | cacaaatgac | attgtcatta | gcaagctgac | 960 |
| ccagatcctt | tcataacctga | ggcagggaac | ccgtaacaag | aagcttaaga | agaaggataa | 1020 |
| aggggaagccg | gaagagaaga | aacctcctga | ggctgacatg | aatatttttg | aagacattgg | 1080 |
| ggattacgta | ccctccacaa | ccaagacacc | tcgggacaag | gagcgggaga | gatatcggga | 1140 |
| acgggagcgt | gatcgggaaa | gagacagaga | ccgtgaccga | gagcgagagc | gagaacgaga | 1200 |
| tcgggaacga | gagcgagagc | gggaccgaga | gagagaagag | gaaaagaaga | gacacagcta | 1260 |
| ctttgagaag | ccaaaagtag | atgatgagcc | catggacgtt | gacaaaggac | ctgggtctac | 1320 |
| caaggagtgt | atcaagtcca | tcaatgaaaa | gtttgctggg | tctgctggct | gggaaggcac | 1380 |
| agaatcgctg | aagaagccag | aagacaaaaa | gcagctggga | gatttctttg | gcatgtccaa | 1440 |
| cagttatgca | gagtgtacc | cagccacgat | ggatgacatg | gctgtggata | gtgatgagga | 1500 |
| ggtggattat | agcaaaatgg | accagggtaa | caagaagggg | cccttagggc | gttgggactt | 1560 |
| tgataccag | gaagaataca | gcgagtatat | gaacaacaaa | gaagctttgc | ccaaggctgc | 1620 |
| attccagtat | ggtatcaaaa | tgtctgaagg | gcggaaaacc | aggcgcttca | aggaaaccaa | 1680 |
| tgacaaagca | gagcttgatc | gccagtggaa | gaagattagt | gcaatcattg | angaagagga | 1740 |
| agaagatgga | agctgatggg | gttgaagtca | aaagacaaaa | atactaataca | ctagttacaa | 1800 |
| ccagagatgc | tccacaagga | tatgctcccc | actgttttct | ttctacaatt | tccaaagggt | 1860 |
| gcaagatgtt | ttttgtgat | gaatataaaa | ttttattgtg | taattacttg | gttccattaa | 1920 |
| aattgggttaa | cttgctaaaa | aaaaaa | | | | 1946 |

<210> 6
 <211> 915
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1)...(912)

<220>
 <221> misc_feature
 <222> (1)...(915)
 <223> n = A,T,C or G

| | | | | | | | | | | | | | | | | |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <400> 6 | | | | | | | | | | | | | | | | |
| atg | atg | agt | atg | ctg | aca | cag | ata | tcc | cca | cca | ctc | tta | tcc | cgc | agc | 48 |
| Met | Met | Ser | Met | Leu | Thr | Gln | Ile | Ser | Pro | Pro | Leu | Leu | Ser | Arg | Ser | |
| 1 | | | | 5 | | | | 10 | | | | | | 15 | | |
| | | | | | | | | | | | | | | | | |
| aag | gct | gat | tgc | ccc | acc | atg | gag | gcc | cag | acc | aca | ctg | acc | aca | aat | 96 |
| Lys | Ala | Asp | Cys | Pro | Thr | Met | Glu | Ala | Gln | Thr | Thr | Leu | Thr | Thr | Asn | |
| | | | 20 | | | | | 25 | | | | | 30 | | | |
| | | | | | | | | | | | | | | | | |
| gac | att | gtc | att | agc | aag | ctg | acc | cag | atc | ctt | tca | tac | ctg | agg | cag | 144 |
| Asp | Ile | Val | Ile | Ser | Lys | Leu | Thr | Gln | Ile | Leu | Ser | Tyr | Leu | Arg | Gln | |
| | | 35 | | | | | 40 | | | | | 45 | | | | |
| | | | | | | | | | | | | | | | | |
| gga | acc | cgt | aac | aag | aag | ctt | aag | aag | aag | gat | aaa | ggg | aag | ccg | gaa | 192 |
| Gly | Thr | Arg | Asn | Lys | Lys | Leu | Lys | Lys | Lys | Asp | Lys | Gly | Lys | Pro | Glu | |
| | | 50 | | | | 55 | | | | 60 | | | | | | |

| | |
|---|-----|
| gag aag aaa cct cct gag gct gac atg aat att ttt gaa gac att ggg | 240 |
| Glu Lys Lys Pro Pro Glu Ala Asp Met Asn Ile Phe Glu Asp Ile Gly | |
| 65 70 75 80 | |
| gat tac gta ccc tcc aca acc aag aca cct cgg gac aag gag cgg gag | 288 |
| Asp Tyr Val Pro Ser Thr Thr Lys Thr Pro Arg Asp Lys Glu Arg Glu | |
| 85 90 95 | |
| aga tat cgg gaa cgg gag cgt gat cgg gaa aga gac aga gac cgt gac | 336 |
| Arg Tyr Arg Glu Arg Glu Arg Asp Arg Glu Arg Asp Arg Asp Arg Asp | |
| 100 105 110 | |
| cga gag cga gag cga gaa cga gat cgg gaa cga gag cga gag cgg gac | 384 |
| Arg Glu Arg Glu Arg Glu Arg Asp Arg Glu Arg Glu Arg Glu Arg Asp | |
| 115 120 125 | |
| cga gag aga gaa gag gaa aag aag aga cac agc tac ttt gag aag cca | 432 |
| Arg Glu Arg Glu Glu Glu Lys Lys Arg His Ser Tyr Phe Glu Lys Pro | |
| 130 135 140 | |
| aaa gta gat gat gag ccc atg gac gtt gac aaa gga cct ggg tct acc | 480 |
| Lys Val Asp Asp Glu Pro Met Asp Val Asp Lys Gly Pro Gly Ser Thr | |
| 145 150 155 160 | |
| aag gag ttg atc aag tcc atc aat gaa aag ttt gct ggg tct gct ggc | 528 |
| Lys Glu Leu Ile Lys Ser Ile Asn Glu Lys Phe Ala Gly Ser Ala Gly | |
| 165 170 175 | |
| tgg gaa ggc aca gaa tcg ctg aag aag cca gaa gac aaa aag cag ctg | 576 |
| Trp Glu Gly Thr Glu Ser Leu Lys Lys Pro Glu Asp Lys Lys Gln Leu | |
| 180 185 190 | |
| gga gat ttc ttt ggc atg tcc aac agt tat gca gag tgc tac cca gcc | 624 |
| Gly Asp Phe Phe Gly Met Ser Asn Ser Tyr Ala Glu Cys Tyr Pro Ala | |
| 195 200 205 | |
| acg atg gat gac atg gct gtg gat agt gat gag gag gtg gat tat agc | 672 |
| Thr Met Asp Asp Met Ala Val Asp Ser Asp Glu Glu Val Asp Tyr Ser | |
| 210 215 220 | |
| aaa atg gac cag ggt aac aag aag ggg ccc tta ggc cgt tgg gac ttt | 720 |
| Lys Met Asp Gln Gly Asn Lys Lys Gly Pro Leu Gly Arg Trp Asp Phe | |
| 225 230 235 240 | |
| gat acc cag gaa gaa tac agc gag tat atg aac aac aaa gaa gct ttg | 768 |
| Asp Thr Gln Glu Glu Tyr Ser Glu Tyr Met Asn Asn Lys Glu Ala Leu | |
| 245 250 255 | |
| ccc aag gct gca ttc cag tat ggt atc aaa atg tct gaa ggg cgg aaa | 816 |
| Pro Lys Ala Ala Phe Gln Tyr Gly Ile Lys Met Ser Glu Gly Arg Lys | |
| 260 265 270 | |
| acc agg cgc ttc aag gaa acc aat gac aaa gca gag ctt gat cgc cag | 864 |
| Thr Arg Arg Phe Lys Glu Thr Asn Asp Lys Ala Glu Leu Asp Arg Gln | |
| 275 280 285 | |

| | |
|---|-----|
| tgg aag aag att agt gca atc att gan gaa gag gaa gaa gat gga agc | 912 |
| Trp Lys Lys Ile Ser Ala Ile Ile Xaa Glu Glu Glu Glu Asp Gly Ser | |
| 290 295 300 | |

| | |
|-----|-----|
| tga | 915 |
|-----|-----|

<210> 7
 <211> 304
 <212> PRT
 <213> Homo sapiens

<220>
 <221> VARIANT
 <222> (1)...(304)
 <223> Xaa = Any Amino Acid

| | | | | | | | | | | | | | | | | | | | |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| <400> 7 | | | | | | | | | | | | | | | | | | | |
| Met | Met | Ser | Met | Leu | Thr | Gln | Ile | Ser | Pro | Pro | Leu | Leu | Ser | Arg | Ser | | | | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | | | | | |
| Lys | Ala | Asp | Cys | Pro | Thr | Met | Glu | Ala | Gln | Thr | Thr | Leu | Thr | Thr | Asn | | | | |
| | | | 20 | | | | | 25 | | | | | | 30 | | | | | |
| Asp | Ile | Val | Ile | Ser | Lys | Leu | Thr | Gln | Ile | Leu | Ser | Tyr | Leu | Arg | Gln | | | | |
| | | 35 | | | | | 40 | | | | | 45 | | | | | | | |
| Gly | Thr | Arg | Asn | Lys | Lys | Leu | Lys | Lys | Lys | Asp | Lys | Gly | Lys | Pro | Glu | | | | |
| | 50 | | | | | 55 | | | | 60 | | | | | | | | | |
| Glu | Lys | Lys | Pro | Pro | Glu | Ala | Asp | Met | Asn | Ile | Phe | Glu | Asp | Ile | Gly | | | | |
| | 65 | | | | 70 | | | | 75 | | | | | 80 | | | | | |
| Asp | Tyr | Val | Pro | Ser | Thr | Thr | Lys | Thr | Pro | Arg | Asp | Lys | Glu | Arg | Glu | | | | |
| | | | 85 | | | | | | 90 | | | | | 95 | | | | | |
| Arg | Tyr | Arg | Glu | Arg | Glu | Arg | Asp | Arg | Glu | Arg | Asp | Arg | Asp | Arg | Asp | | | | |
| | | | 100 | | | | | 105 | | | | | 110 | | | | | | |
| Arg | Glu | Arg | Glu | Arg | Glu | Arg | Asp | Arg | Glu | Arg | Glu | Arg | Glu | Arg | Asp | | | | |
| | 115 | | | | | 120 | | | | | | 125 | | | | | | | |
| Arg | Glu | Arg | Glu | Glu | Glu | Lys | Lys | Arg | His | Ser | Tyr | Phe | Glu | Lys | Pro | | | | |
| | 130 | | | | 135 | | | | | 140 | | | | | | | | | |
| Lys | Val | Asp | Asp | Glu | Pro | Met | Asp | Val | Asp | Lys | Gly | Pro | Gly | Ser | Thr | | | | |
| | 145 | | | 150 | | | | | 155 | | | | | 160 | | | | | |
| Lys | Glu | Leu | Ile | Lys | Ser | Ile | Asn | Glu | Lys | Phe | Ala | Gly | Ser | Ala | Gly | | | | |
| | | | 165 | | | | | 170 | | | | | | 175 | | | | | |
| Trp | Glu | Gly | Thr | Glu | Ser | Leu | Lys | Lys | Pro | Glu | Asp | Lys | Lys | Gln | Leu | | | | |
| | | | 180 | | | | | 185 | | | | | 190 | | | | | | |
| Gly | Asp | Phe | Phe | Gly | Met | Ser | Asn | Ser | Tyr | Ala | Glu | Cys | Tyr | Pro | Ala | | | | |
| | 195 | | | | | | 200 | | | | 205 | | | | | | | | |
| Thr | Met | Asp | Asp | Met | Ala | Val | Asp | Ser | Asp | Glu | Glu | Val | Asp | Tyr | Ser | | | | |
| | 210 | | | | 215 | | | | | 220 | | | | | | | | | |
| Lys | Met | Asp | Gln | Gly | Asn | Lys | Lys | Gly | Pro | Leu | Gly | Arg | Trp | Asp | Phe | | | | |
| | 225 | | | | 230 | | | | 235 | | | | | 240 | | | | | |
| Asp | Thr | Gln | Glu | Glu | Tyr | Ser | Glu | Tyr | Met | Asn | Asn | Lys | Glu | Ala | Leu | | | | |
| | | | 245 | | | | | 250 | | | | | 255 | | | | | | |
| Pro | Lys | Ala | Ala | Phe | Gln | Tyr | Gly | Ile | Lys | Met | Ser | Glu | Gly | Arg | Lys | | | | |
| | | 260 | | | | | 265 | | | | | 270 | | | | | | | |
| Thr | Arg | Arg | Phe | Lys | Glu | Thr | Asn | Asp | Lys | Ala | Glu | Leu | Asp | Arg | Gln | | | | |
| | 275 | | | | | | 280 | | | | | 285 | | | | | | | |
| Trp | Lys | Lys | Ile | Ser | Ala | Ile | Ile | Xaa | Glu | Glu | Glu | Glu | Asp | Gly | Ser | | | | |
| | 290 | | | | 295 | | | | | | 300 | | | | | | | | |

<210> 8

<211> 16,
<212> PRT
<213> Homo sapiens

<400> 8
Arg Arg Gln Thr Leu Ser His Gly Ser Ser Ser Pro Ala Arg Ala Cys
1 5 10 15